Provide a general description of operations.

T1-T4, T7 Area

The T1-T4, T7 area produces fluoromonomers tetrafluoroethylene (TFE) and hexafluoropropylene (HFP); an intermediate, perfluorocyclobutane; and byproducts hydrogen chloride (HCl, aqueous) and calcium fluoride (CaF2, solid). The production facility is divided into the following logical sections: T1-TFE Synthesis, T2-TFE Refining, T3-HFP Synthesis, T4-HFP Refining, and T7-Utilities.

Fluorocarbons are reacted by pyrolysis in T1 section and the products are separated to form crude TFE and recovered byproducts. TFE is refined in T2 section. In-process materials and intermediates are reacted by pyrolysis in T3 section to form crude HFP that is then refined in T4 section.

T7 section is comprised of several utilities, including refrigeration and cold brine supply, the unit vacuum systems for maintenance clearing of equipment, waste acid neutralization, and the thermal converter. The thermal converter combusts fluorine-containing byproduct gases from the other process sections (and from polymerization operations in C1, C2, and T6 sections) and two different non-hazardous fluorine- containing liquid streams to produce aqueous hydrogen fluoride (HF) which is reacted with slaked lime (calcium oxide or CaO) to form CaF2.

T5 Area

This unit produces fluoropolymer resin. The basic processes used are polymerization, drying, and modification. The resin is produced by water based emulsion polymerization in one of two reactor units. Water, monomer (primarily tetrafluoroethylene), process aids, and other minor ingredients are introduced to the reactor. The reaction starts under elevated pressure, but proceeds to an endpoint at sub-ambient pressure. The resin is removed as slurry and is stored in several tanks pending further treatment and drying.

The polymer slurry is processed and dried. The wet polymer passes through one of two dryers. Emissions from either dryer pass through cyclone separators to recover particulate matter. Both cyclone systems employ a water spray to improve effectiveness. The material recovered from the cyclones is returned to the process. Dried resin is transferred to a pack-out room where it is drummed using automated equipment. Air from the pack-out room is exhausted though a scrubber. The recovered material from the packout exhaust is not recycled to the process.

T6 Area

Teflon® T6 area produces TFE based homopolymers in four agitated batch reactors. The reaction takes place in an aqueous medium, and a milk white raw polymer dispersion in water is produced. A portion of the raw dispersion production is dried and sold as powder, and a portion is processed and sold as a finished aqueous dispersion. Copolymer dispersion products are also made.

A batch is started by adding water and other ingredients to the reactor. Polymerization takes place in the aqueous phase at high temperature and pressure. At the end of each batch, most of the unreacted material is recycled for reuse or sent to the thermal converter.

Some products are made by partially concentrating the reactor output in a water/solids separation vessel where some of the water is removed. For product sold as fine powder, the material is dried at high temperature with subsequent removal of impurities. The dried product is cooled and packaged.